

CLAIMS

1. A method for the acquisition of burst synchronisation signals in a spread spectrum communication system, comprising the following steps:

- 5 1) Receiving a burst synchronisation signal,
- 10 2) Applying to said received burst synchronisation signal a dwelling procedure according to a scheduling scheme, whereby said dwelling procedure comprises the steps of calculating a matched filter output, summing said outputs over one slot time, calculating the energy in said sum, searching the maximum energy value and passing it to a Random Access Memory,
- 15 3) Based on said scheduling scheme containing a set of $X=(N+1)/2$ hypotheses, being numbered $0, 1, \dots, X-1$ and N being the number of slots in 1 frame, the slots being numbered $0, 1, \dots, N-1$, a dwelling procedure being performed in hypothesis $n=0, \dots, X-2$ in slots $n, n+N-D$ and $n+D$ and in hypothesis $n=X-1$ in slots n and $n+D$, D being the longest distance in slots between two sync slots,
- 20 4) At the end of the scheduling scheme searching for the overall maximum energy value among the energy values stored in said Random Access Memory, whereby said scheduling scheme is built up by
 - 25 (a) choosing any hypothesis from said set of hypotheses,
 - (b) performing a dwelling procedure in the frame slots as indicated in the chosen hypothesis,
 - (c) leaving one slot open after the last dwelling procedure for said chosen hypothesis,
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5 (d) choosing an hypothesis not used yet, having in the next available slot a dwelling procedure in that slot and not in the subsequent slot or having in the next available slot a dwelling procedure in that slot as well as in the subsequent,

10 (e) performing a dwelling procedure in the frame slots as indicated in the chosen hypothesis,

(f) leaving one slot open after the last dwelling procedure for said hypothesis,

15 (g) repeating (d-f) until all hypotheses have been used, whereby in case there is no unused hypothesis that matches, the slot is left empty and the following slot is used.

2. A method for the acquisition of burst synchronisation signals as in claim 1, whereby steps (b) and (e) are repeated.

3. A method for the acquisition of burst synchronisation signals in a spread spectrum communication system, comprising the following steps:

25 1) Receiving a burst synchronisation signal,

2) Applying to said received burst synchronisation signal a dwelling procedure according to a scheduling scheme, whereby said dwelling procedure comprises the steps of calculating a matched filter output, summing said outputs over one slot time, calculating the energy in said sum, searching the maximum energy value and passing it to a Random Access Memory,

30 3) Based on said scheduling scheme containing a set of $X=(N+1)/2$ hypotheses, being numbered $0, 1, \dots, X-1$ and N being the number of slots in 1 frame, the slots being numbered $0, 1, \dots, N-1$, a

dwelling procedure being performed in hypothesis $n=0, \dots, X-2$ in slots n , $n+N-D$ and $n+D$ and in hypothesis $n=X-1$ in slots n and $n+D$, D being the longest distance in slots between two sync slots,

5 4) At the end of the scheduling scheme searching for the overall maximum energy value among the energy values stored in said Random Access Memory, whereby said scheduling scheme is
10 built up by

(a) choosing any hypothesis from said set of hypotheses,
(b) performing a dwelling procedure in the frame slots as indicated in the chosen hypothesis,
15 (c) choosing an hypothesis not used yet, having in the next available slot a dwelling procedure in that slot and not in the subsequent slot or having in the next available slot a dwelling procedure in that slot as well as in the subsequent,
20 (d) performing a dwelling procedure in the frame slots as indicated in the chosen hypothesis,
(e) repeating (c-d) until all hypotheses have been used, whereby in case there is no unused
25 hypothesis that matches, the slot is left empty and the following slot is used.

4. A method for the acquisition of burst synchronisation signals as in any of the previous claims, wherein $N=15$ and $D=8$.

30 5. A module for the acquisition of burst synchronisation signals, comprising means for applying a method as in any of the previous claims.

6. An integrated circuit device, comprising a module as in claim 5.

7. A receiver comprising a module as in claim 5 or an integrated circuit device as in claim 6.

8. A spread-spectrum communication apparatus comprising a module as in claim 5 or an integrated circuit device as in claim 6.